REMARKS/ARGUMENTS

Claims 1-22 are active in the present application. Favorably reconsideration is respectfully requested.

At the outset, Applicants thank Examiner Sagar for his comments in the outstanding Office Action and during the discussions of the present application between the date of mailing the outstanding Office Action and the date of filing the documents herewith. Further, Applicants thank the Examiner for clarifying the bases of rejection and for indicating that the amendment above combined with the remarks below appear to further favorable prosecution of the present application.

The rejections of Claims 1-17 under 35 U.S.C. § 103(a) over Tohge (JI. Mat. Sc., V10 (1999) p. 273-277), Valente et al., Cohn , Duncombe et al., and/or Kamisawa are traversed below.

Applicants respectfully request the above rejections to be withdrawn on the grounds that 1) Tohge's disclosure actually teaches away from using AcAc; 2) Tohge's disclosure actually teaches away from using an acid; 3) There is not motivation to combine Tohge with any one of Valente et al., Cohn , and/or Duncombe et al.

Tohge discloses, at best, a method of forming photosensitive resins containing polymerized alkoxides. The metal alkoxides may be Ti and/or Zr-alkoxides. The Office recognizes that Tohge fails to disclose or suggest the addition of an acid or HMTA. Further, the resins are formed from the reaction of metal n-butoxides with chelating agents with benzylacetone (BzAc), not acetylacetone (AcAc). In fact, Tohge discloses that it is necessary to not use AcAc in favor of (BzAc) due to its applicability during a UV exposure step in the production of the film according to Tohge by a mercury lamp (see page 273, column 2, line 7, to page 274, column 1, line 1). However, the Office contends that Tohge discloses that (BzAc) are equivalents and/or homologs (AcAc) even in the face of the above-mentioned

admission by Tohge's disclosure and Tohge indicating that AcAc may have been utilized in other disclosures and fails to mention AcAc at any other point in its disclosure. It should be noted that the references disclosing the utility of AcAc have not been relied upon by the Office to sustain a rejection. Therefore, Applicant do not address these disclosures at this time even though Applicants have brought them to the Office's attention. Apparently, the Office has concluded that they are not material to the patentability of the claimed invention.

In light of the above, Tohge not only teaches away from the claimed invention, it also deflates any motivation or expectation of success to modify its disclosure to utilize AcAc, much less acid. Yet, to support the Office's rejection, the Office relies on Valente et al., Cohn , and/or Duncombe et al. and allege that there is not only motivation and expectation of success, but also a *prima facia* case of obviousness of Claims 1-17. Applicants respectfully disagree.

In order to support all of the above-mentioned rejections of Claims 1-17, the Office relies on the disclosure of Valente to apparently supply motivation to add HMTA and an acid to the reaction mixture of Tohge even when Valente explicitly discloses that the process is complex and difficult to control (see column 2, lines 6-18).

The Office relies on the disclosure of Duncombe to apparently supply motivation to the combination of Tohge and Valente to add an acid such as propanoic acid to the reaction mixture.

Further, the Office relies on the disclosure of Cohn to apparently supply motivation to add tetrafluoroacetic acid to the reaction mixture obtained when combining the disclosures of Tohge and Valente.

Finally, the Office relies on Kamisawa to apparently provide motivation to add a photoactive compound to the reaction mixture obtained when combining the disclosures of Tohge and Valente.

There is a very common theme in all of the above rejections which is the combination of the disclosures of Tohge and Valente. Admittedly, the Office relies on Tohge which fails disclose the addition of an acid and supports this alleged omission by relying on the disclosure of Valente. The Office contends that because Tohge and Valente are analogous art, there is inherent motivation to combine the two so as to modify the material and method of Tohge by adding an acid and HMTA according to Valente.

The Office's contention contradicts explicit disclosures within Tohge which teach away from such combination. Tohge discloses that it is undesirable to add an acid to its reaction mixture prior to exposing such mixture to radiation by stating

> "The photo-exicitation of this band disassociated the chelate rings *(of BzAc)* and simultaneously decreased the solubility of the gel film in acidic aqueous solutions or alcohols." (see pg 276, second column, lines 3-9 of the conclusion-further description and emphasis added for clarity).

Accordingly, Tohge explicitly discloses that it would be undesirable to modify the mixture disclosed therein to be an acidic aqueous solution prior to exposing the solution to radiation because the solubility of the resultant material is decreased under acidic aqueous solutions and therefore would prematurely crash out of solution prior to the UV radiation step.

In direct contrast, the present invention relates to a crosslinked resin containing a material obtained from mixing at least one member selected from the group consisting of a simple metal alkoxide, complex metal alkoxide and silicon alkoxide, with acetylacetone, hexamethylenetetramine and at least one acid. Accordingly, the claimed invention relates to a mixture containing an acid which would cause the material according to Tohge to apparently crash out of solution. Yet, in spite of this direct teaching away from the claimed invention in Tohge, the Office states that it is analogous art with any one of Valente et al.,

Cohn , and/or Duncombe et al. which are relied upon to provide motivation to alter Tohge's disclosure to have an acid present therein.

Applicants respectfully request the above rejections to be withdrawn on the grounds that 1) Tohge's disclosure actually teaches away from using AcAc; 2) Tohge's disclosure actually teaches away from using an acid; 3) There is not motivation to combine Tohge with any one of Valente et al., Cohn , and/or Duncombe et al.

While the Office relies on any combination of ohge (JI. Mat. Sc., V10 (1999) p. 273-277), Valente et al., Cohn , Duncombe et al., and/or Kamisawa to allegedly disclose or suggest "all" the limitations of the present invention, the Office actually fails to satisfy its objective as required by MPEP § 2143.03 and *In re Royka* 180 USPQ 580 (CCPA 1974) as discussed above.

Additionally, it has not been pointed out to the Applicants as to where any specific motivation lies within any of the above-mentioned references that would motivate the skilled artisan reading the same to modify the disclosures of one another towards the claimed invention, especially when there is actual disclosure teaching away therefrom as discussed above. In fact, taken as a whole, Tohge, Valente et al., Cohn , Duncombe et al., and/or Kamisawa provide the skilled artisan with no motivation or expectation of success therein.

In light of the above, it appears as if the Examiner is relying on the Applicants disclosure to supply motivation to modify the disclosures of Tohge, Valente et al., Cohn , Duncombe et al., and/or Kamisawa to arrive at the claimed invention. However, this is clearly improper according to a recent decision by the U.S. Federal Courts in *In re Lee* (61 USPQ2D 1430 (CA FC 2002)). The *Lee* Court indicated that the Office must provide specific motivation, hint, or suggestion, found in the references relied upon to support a prima facia case of obviousness. In the present case, the Office appears to rely on the present specification for motivation, which is clearly forbidden according to the *Lee* Court, especially

in light of the complete omission by the disclosures in the cited art of any such motivation. In light of this decision, Applicants respectfully request the Office not to use the present specification as a guidepost to find motivation within the disparate disclosure of the cited reference (see the decision in *In re Vaeck* 20 USPQ 2d 1438).

The rejection of Claim 1 under 35 U.S.C. § 103(a) over U.S. Patent 5,494,700 (U.S. '700), U.S. Patent 5,944,866 (U.S. '866), and/or U.S. Patent 5,100,764 (U.S. '764) is traversed below.

U.S. '700, at best, discloses heating a mixture that includes a metal alkoxide and solvent with the addition of an acid thereto. The Office indicates that U.S. '700 fails to disclose altogether the inclusion of HMTA or the use of UV radiation. Still further, U.S. '700 fails to disclose or suggest the use of AcAc in the mixture.

U.S. '866 discloses, at best, the use of HMTA as a stabilizer and a gelation agent (see column 3, lines 40-59). The Office correctly indicates that U.S. '866 fails to disclose or suggest the use of UV radiation to form the product. Still further, U.S. '866 fails to disclose or suggest the addition of acetylacetone (AcAc) to the mixture as well.

U.S. '764 discloses, at best, including a photoactive compound as a precursor to a polymer produced from a reaction mixture (see column 3, lines 7-23).

In direct contrast to the above-mentioned references, the present invention relates to a cross-linked resin which contains the reaction product of mixing one member selected from the group of a simple metal alkoxide, a complex metal alkoxide, and a silicon alkoxide, with acetylacetone (AcAc), hexamethylenetetramine (HMTA), and at least one acid. The reaction product is further produced by heating the mixture and exposing it to radiation (see Claim 1). Since none of the above-mentioned disclosures of U.S. '700, U.S. '866, and U.S. '764 disclose or suggest a mixture containing AcAc, no combination of these references could possibly disclose or suggest the claimed invention.

While the Office relies on the combination of U.S. '700, U.S. '866, and U.S. '764 to allegedly disclose or suggest "all" the limitations of the present invention, the Office actually fails to satisfy its objective as required by MPEP § 2143.03 and *In re Royka* 180 USPQ 580 (CCPA 1974) as discussed above.

Additionally, it has not been pointed out to the Applicants as to where any specific motivation lies within any of the above-mentioned references that would motivate the skilled artisan reading the same to modify the disclosures of one another towards the claimed invention. In fact, taken as a whole, U.S. '700, U.S. '866, and U.S. '764 provide the skilled artisan with no motivation or expectation of success therein.

In light of the above, it appears as if the Examiner is relying on the Applicants disclosure to supply motivation to modify the disclosures of U.S. '700, U.S. '866, and U.S. '764 to arrive at the claimed invention. However, this is clearly improper according to a recent decision by the U.S. Federal Courts in *In re Lee* (61 USPQ2D 1430 (CA FC 2002)). The *Lee* Court indicated that the Office must provide specific motivation, hint, or suggestion, found in the references relied upon to support a prima facia case of obviousness. In the present case, the Office appears to rely on the present specification for motivation, which is clearly forbidden according to the *Lee* Court, especially in light of the complete omission by the disclosures in the cited art of any such motivation. In light of this decision, Applicants respectfully request the Office not to use the present specification as a guidepost to find motivation within the disparate disclosure of the cited reference (see the decision in *In re Vaeck* 20 USPQ 2d 1438).

In view of the above, any combination of U.S. '700, U.S. '866, and U.S. '764 clearly fails to suggest the claimed invention. Therefore, no prima facia case of obviousness can possibly exist over any combination of U.S. '700, U.S. '866, and U.S. '764. Accordingly, withdrawal of this ground of rejection is respectfully requested.

The rejection of Claims 18, 20 under 35 U.S.C. § 102(b) and/or § 103(a) over Valente is traversed below.

Valente discloses, at best, fabricating capacitors and ferro-electric memories (see column 4, lines 49-68). Additionally, Valente discloses the fabrication of ceramic films by spin coating the resin containing a ceramic and sintering the film. However, Valente fails to disclose or suggest a capacitor and/or a ferro-electric memory with a ceramic or a glass manufactured by preparing a solution containing at least one member of a simple metal alkoxide, complex metal alkoxide, and silicon oxide in a AcAc, reacting HMTA with the solution under hot conditions to produce a resin, depositing the resin on a substrate, exposing the resin to UV radiation, and calcining the radiation-exposed resin. In fact, Valente fails altogether disclose exposing a resin to UV radiation.

In direct contrast to Valente, the claimed invention relates, in part, to a capacitor and/or a ferro-electric memory containing a ceramic or glass made by preparing a solution containing at least one member selected from a simple metal alkoxide, complex metal alkoxide, and silicon oxide in AcAc, reacting the solution with HMTA under hot conditions to produce a resin, depositing the resin on the substrate, exposing the resin to UV radiation, and calcining the radiation-exposed resin.

Since Valente clearly fails to disclose or suggest all limitations of the claimed invention as required (see *In re Royka*), Applicants respectfully request withdrawal of this ground of rejection.

The rejection of Claim 19 under 35 U.S.C. § 102(b) and/or § 103(a) over Mori is traversed below.

Mori discloses, at best, that perovskitic oxides as piezo-electric materials (see column 1, lines 14-16). However, Mori fails to disclose or suggest altogether a piezo-electric transducer containing a ceramic or glass manufactured by a process of preparing a solution

containing at least one of a simple metal alkoxide, a complex metal alkoxide, and silicon oxide in AcAc, reacting the solution with HMTA under hot conditions to produce a resin, depositing the resin on a substrate, exposing the resin to UV radiation, and calcining the radiation-exposed resin.

In direct contrast to Mori , the claimed invention relates, in part, to a capacitor and/or a ferro-electric memory containing a ceramic or glass made by preparing a solution containing at least one member selected from a simple metal alkoxide, complex metal alkoxide, and silicon oxide in AcAc, reacting the solution with HMTA under hot conditions to produce a resin, depositing the resin on the substrate, exposing the resin to UV radiation, and calcining the radiation-exposed resin.

Since Mori clearly fails to disclose or suggest all limitations of the claimed invention as required (see *In re Royka*), Applicants respectfully request withdrawal of this ground of rejection.

The rejection of Claims 21-22 under 35 U.S.C. § 102(b) and/or § 103(a) over U.S. Patent No. 4,541,855 (U.S. '855) is traversed below.

U.S. '855 discloses, at best, a method of forming a glass or ceramic product. However, U.S.'855 fails to disclose or suggest a ceramic or glass made by a process of preparing the solution containing at least one member from the group of a simple metal alkoxide, complex metal alkoxide, and silicon oxide in AcAc, reacting the solution with HMTA with the solution under hot conditions to produce a resin, depositing the resin on a substrate, exposing the resin to UV radiation, and calcining the radiation-exposed resin.

In direct contrast to U.S. '855, the claimed invention relates, in part, to a capacitor and/or a ferro-electric memory containing a ceramic or glass made by preparing a solution containing at least one member selected from a simple metal alkoxide, complex metal alkoxide, and silicon oxide in AcAc, reacting the solution with HMTA under hot conditions

to produce a resin, depositing the resin on the substrate, exposing the resin to UV radiation, and calcining the radiation-exposed resin.

Since U.S. '855 clearly fails to disclose or suggest all limitations of the claimed invention as required (see *In re Royka*), Applicants respectfully request withdrawal of this ground of rejection.

The rejections of Claims 1-17 under 35 U.S.C. § 103(a) over Tohge and co-worker (JI. Mat. Sc., V10 (1999) p. 273-277), from now on this is Tohge, Valente et al. from now on this is Valente et al., Cohn from now on this is Cohn, Duncombe et al., from now on this is Duncombe et al., and/or Kamisawa from now on this is Kamisawa are traversed below.

Tohge discloses, at best, a method of forming photosensitive resins containing polymerized alkoxides. The resins are formed from the reaction of metal n-butoxides with chelating agents AcAc or BzAc. The metal alkoxides may be Ti and/or Zr-alkoxides. Tohge fails to disclose or suggest the addition of an acid or HMTA. Further, Tohge discloses that it is undesirable to add an acid to its reaction mixture prior to exposing such mixture to radiation by stating

> The photo-exicitation of this band diassociated the Q8 rings and simultaneously decreased the solubility of the gel film in acidic aqueous solutions or alcohols.

Accordingly, Tohge explicitly discloses that it would be undesirable to modify the mixture disclosed therein to be an acidic aqueous solution prior to exposing the solution to radiation because the solubility of a gel film is decreased under acidic aqueous solutions and therefore would prematurely crash out of solution.

In direct contrast, the present invention discloses the addition of at least one acid with HMTA to form a mixture and then heating the mixture and exposing it to radiation to form a

cross-link resin containing the material therefrom. Applicants thank the Examiner for recognizing that Tohge fails to disclose or suggest all limitations of the claimed invention.

In order to support all of the above-mentioned rejections of Claims 1-17, the Office relies on the disclosure of Valente to apparently supply motivation to add HMTA and an acid to the reaction mixture of Tohge even when Valente explicitly discloses that the process is complex and difficult to control (see column 2, lines 6-18).

The Office relies on the disclosure of Duncombe to apparently supply motivation to the combination of Tohge and Valente to add an acid such as propanilic acid to the reaction mixture. Further, the Office relies on the disclosure of Cohn to apparently supply motivation to add tetrafluoroacetic acid to the reaction mixture obtained when combining the disclosures of Tohge and Valente.

Finally, the Office relies on Kamisawa to apparently provide motivation to add a photoactive compound to the reaction mixture obtained when combining the disclosures of Tohge and Valente.

The objections to the drawings are believed to be obviated by submission of corrected drawings herewith. An indication to this affect is requested in the next action on the merits.

Applicants respectfully submit that the present application is now in condition for allowance. Should anything further be required to place this application in condition for allowance, the Examiner is requested to contact Applicants' attorney by telephone.

Respectfully submitted,

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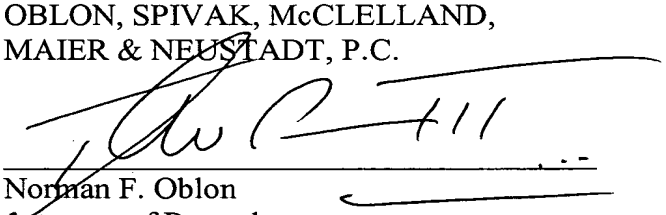
MAIER & NEUSTADT, P.C.



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